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ABSTRACT

The addition of captions to television is a technological breakthrough that can be used to enhance the vocabulary and comprehension skills of young readers. Taken together, several studies suggest that captioned television is a motivating medium for below-average readers and bilingual students, and that simultaneous processing (audio/video/text) enhances learning. Of the many uses of captioned video in the development of literacy skills, vocabulary learning appears to be one of the most valuable. A fourth-grade teacher, and other teachers at the same school, have capitalized on the power of video, using it as a way to get children excited about ideas in the world, particularly about science and social studies concepts. Suggestions teachers have found useful when using captioned video include: get to know the equipment; select a high-interest captioned video; preview the video; locate related texts; introduce the video; provide opportunities for rewatching the video; and create a video library. Captioned television captures students' attention, and its multisensory presentation of information decreases the difficulty of learning new words. The combination of the video action with spoken dialogue and printed words is a powerful tool in learning to read. (Contains 19 references.) (RS)

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Captioned Video and Vocabulary Learning

An Innovative Practice in Literacy Instruction

Patricia S. Koskinen Robert M. Wilson Linda B. Gambrell Susan B. Neuman

NRRC
National Reading Research Center

Instructional Resource No. 3
Summer 1993

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Patricia S. Koskinen
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Linda B. Gambrell
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Susan B. Neuman
Temple University

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318 Aderhold
University of Georgia
Athens, Georgia 30602-7125
(706) 542-3674 Fax: (706) 542-3678
INTERNET: NRRC@uga.cc.uga.edu

NRRC - University of Maryland College Park
2102 J. M. Patterson Building
University of Maryland
College Park, Maryland 20742
(301) 405-8035 Fax: (301) 314-9625
INTERNET: NRRC@umail.umd.edu

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The National Reading Research Center (NRRC) is funded by the Office of Educational Research and Improvement of the U.S. Department of Education to conduct research on reading and reading instruction. The NRRC is operated by a consortium of the University of Georgia and the University of Maryland College Park in collaboration with researchers at several institutions nationwide.

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Donna E. Alvermann, Co-Director
National Reading Research Center
318 Aderhold Hall
University of Georgia
Athens, GA 30602-7125
(706) 542-3674

John T. Guthrie, Co-Director
National Reading Research Center
2102 J. M. Patterson Building
University of Maryland
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About the Authors

Patricia S. Koskinen is Associate Director for Professional Relations at the National Reading Research Center and a member of the Graduate Faculty at the University of Maryland. Her research focus is instructional strategies that influence vocabulary learning and text comprehension, including retellings, repeated reading, and captioned television. She may be contacted at the National Reading Research Center, 2102 J.M. Patterson Building, University of Maryland, College Park, MD 20742.

Robert M. Wilson is Professor Emeritus at the University of Maryland and, until recently, was Director of the University of Maryland Reading Clinic. His research focuses on comprehension strategy instruction and the use of signing and captioned television to enhance vocabulary knowledge. He may be contacted at 14506 Perrywood Drive, Burtonsville, MD 20866.

Linda B. Gambrell is a professor in the Department of Curriculum and Instruction at the University of Maryland and a principal investigator at the National Reading Research Center. Her research interests include motivation to read, comprehension strategy instruction, and early literacy development. She may be contacted at the National Reading Research Center, 2102 J.M. Patterson Building, University of Maryland, College Park, MD 20742.

Susan B. Neuman is an associate professor in the Curriculum and Instruction and Technology in Education Department at Temple University, where she is Coordinator of the Reading and Language Arts Graduate Program. Her research covers media and literacy, leisure reading, and play as a context for literacy development. She may be contacted at Temple University, 437 Ritter Hall, Philadelphia, PA 19122.

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Patricia S. Koskinen
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University of Maryland College Park

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Universities of Georgia and Maryland
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Summer 1993

Dwayne and Annette carefully pulled the television cart out of the closet and Ricardo picked up the copies of the termite story. These below-average readers in Mrs. Howe's fourth grade class had been eagerly anticipating reading time because their reading group was going to see the science video with ugly baby termites in their giant mound. The day before these students had watched a captioned video on African termites. The termite mound they saw didn't look like the ant hill they knew. It was bigger than a zebra and almost as tall as an elephant.

After the previous day's video reading, Annette found a picture of a termite mound in *Insects Do the Strangest Things* (Hornblow & Hornblow, 1968) and didn't think it "looked so big." Ricardo was excited when he discovered that his book on bees had some of the same words he had seen on the captioned video. He discovered that bees live in a "colony" and that they also have "workers" and a "queen." The pictures he found of little honeybee grubs didn't seem as awful as the termite babies in the video. Diane took the African termite story home to read to her brother, who loves bugs, and Chris decided he was going to search for real termites. He thought he might find some at home because his mother had said the house was going to fall down if they didn't get rid of the termites!

The children in this fourth grade classroom have been learning to read and write in a literacy program that includes

Figure 1.
Captioned Science Program

the use of captioned television as one of many reading materials. Captioned television is used as a supplement to the basic reading instructional program. While all children in this classroom had opportunities to view content-related television programs with captions, the children who are experiencing reading difficulties receive supplemental reading instruction which uses the captions on the video as reading material. Reading the captions provides these students with opportunities to engage in guided reading activities in the highly motivating and reinforcing context of television viewing.

The addition of captions to U.S. commercial and public television programs provides many opportunities for screen reading. Captions, which are similar to subtitles on foreign films, can be seen on television sets that have special electronic TeleCaption decoders. A decoder, which is easily attached to a television set, can be purchased for approximately U.S. $160. Some schools have purchased decoders and teachers are now using high-interest captioned programming to develop literacy skills. In the near future, however, captions will be available at no additional cost to viewers of regular television due to recent legislation passed by Congress. The Television Decoder Circuitry Act of 1990 requires that all new television sets sold in the United States after June 1993 have

built-in circuitry to decode and display closed-captioned programming.

Captions were originally developed for deaf and hearing-impaired viewers, but educators of students with normal hearing have found that captions can turn television into a moving storybook. Captions put words in a motivating environment where the audio and video contexts help viewers understand printed words they might not know how to read. Because there are now over 450 hours of captioned television programming broadcast weekly on the major networks and cable stations, educators are becoming increasingly aware of the many screen-reading opportunities.

Although much of the original research on captioned television was conducted with deaf or hard-of-hearing individuals, during the last ten years a number of research studies have focused on the positive benefits of using captioned television with students who have normal hearing. These studies have explored the effects of captioned television on motivation, reading vocabulary, and reading comprehension with below-average readers and bilingual students. Several studies suggest that students with reading difficulties can and do read captions on television (Adler, 1985; Koskinen, Wilson, Gambrell, & Jensema, 1986). In a later study conducted by Koskinen, Wilson, Gambrell, and Jensema (1991), below-average readers who received twice-weekly captioned television instruction over a two-month period reported that viewing television with captions was highly motivating.

Most importantly, several studies indicate that captions enhance the reading vocabulary and comprehension of school-age below-average readers (Adler, 1985; Koskinen, et al., 1986; Koskinen, Wilson, Gambrell, & Jensema, 1987). And another study conducted with bilingual students found that those who viewed captioned videos performed significantly better on word identification, word meaning, and content learning assessments than students who viewed the same videos without captions (Neuman & Koskinen, 1992).

Taken together, these studies suggest that captioned television is a motivating medium for improving the vocabulary and comprehension skills of below-average readers and bilingual students. These studies also support the theoretical notion that simultaneous processing (audio/video/text) enhances learning.

CLASSROOM USE OF CAPTIONED TELEVISION

Because captioned video instruction involves the use of relatively new technology, research has also explored teachers' skill in developing and implementing well-structured vocabulary and comprehension lessons with captioned video materials. In a study conducted with 45 learning disabled students, classroom teachers developed supplemental reading lessons

using captioned programs such as situation comedies, cartoons, and science videos (Koskinen, et al., 1991). Not only was there high teacher and student satisfaction with these lessons, but objective evaluations by trained observers indicated the high quality of teacher-designed lessons and an equally high level of student motivation and on task behavior. All seven teachers involved in this study reported that captioned TV was well suited to the development of vocabulary skills. These teachers also suggested a variety of other skills for which captioned video is well suited, such as prediction, character analysis, and sequencing. In addition, teachers' ratings of students' on-task behavior and interest were exceptionally high.

At the conclusion of the study, all participating teachers indicated that they would use captioned television in their classrooms on the average of once or twice a week. Students participating in the study reported that they enjoyed watching captioned TV programs and that watching captioned TV helped them learn new words.

CAPTIONED TELEVISION AND VOCABULARY LEARNING

Of the many uses of captioned video in the development of literacy skills, vocabulary learning appears to be one of the most valuable. Nagy and Herman (1987) have discussed the need for learning words from context, and captioned video provides a semantically enriched context where visual images and sound lend meaning to the printed words that appear on the screen (Neuman & Koskinen, 1992).

Researchers have documented that students learn new words through reading (Jenkins, Stein, & Wysocki, 1984; Nagy, Anderson, & Herman, 1987), estimating that they acquire 3,000 words per year through wide reading (Nagy, Herman, & Anderson, 1985). As McKeown and her colleagues have pointed out, word learning is related to the frequency of exposure to print (McKeown, Beck, Omanson, & Pople, 1985). While many high-achieving students read extensively, low-achieving students often read infrequently, and thus have less exposure to print. We know, however, that many students spend a great deal of time watching television (Beentjes & Van Der Voort, 1988). If they watch captioned television, they will be repeatedly exposed to words in context and the opportunity for vocabulary learning will be enhanced. Stahl and Fairbanks (1986) also have noted the importance of context in vocabulary instruction. In their review of 52 studies, they concluded that effective vocabulary instruction involves contextual as well as definitional instruction. Captioned television allows viewers to focus attention on both definitional and contextual information; it enhances word meaning by providing a semantically rich visual setting that presents printed words in context with pictorial images (Neuman & Koskinen, 1992).

Captioned television provides a presentation of information that includes opportunities to view the video action, hear the spoken word, and see the printed text. This multi-sensory presentation is appealing to students. Not only does it decrease the difficulty of learning new words, but it is a medium with which students feel confident (Koskinen, et al., 1991). Salomon (1984) noted that students perceive themselves as highly effective at processing information from television. A major problem for below-average readers has been attending to the reading task. The world of print has often been threatening for these students and many have found that the best way to deal with this threat is to avoid reading. The motivating qualities of captioned television in the instructional setting can help students overcome this avoidance. They want to watch captioned television and are interested in reading associated printed text (Koskinen, Wilson, & Jensema, 1985; Koskinen, et al., 1991).

Because of the enriched contextual setting for vocabulary learning and students' positive response to captioned video, teachers have become creative in developing vocabulary activities that use captioned video. These activities have the same features of any well developed vocabulary lesson, including multiple opportunities to interact with targeted words within a meaningful context. The following example shows how one teacher used captioned video to focus on vocabulary development.

HOW MRS. HOWE'S CLASS USES CAPTIONED TELEVISION

Mrs. Howe's class had been studying insects, so she decided to use a two-minute *3-2-1 Contact* video to show them an African termite colony. After telling the students that they were going to watch a program about how new termite colonies are built, she put the phrase *Alate termite colonies* on the chalk board. She pointed to appropriate words in the phrase as she explained that they were going to learn about the inside and outside of *Alate termite colonies.* She went on to activate prior knowledge by having a short discussion about what students knew related to the colony building of bees, ants, and termites. After this discussion, Mrs. Howe gave a two-sentence introduction to the video and asked the students to watch the program carefully and to read the captions so they could describe the inside and outside of the termite colony.

After viewing the video and following up on the initial purpose of describing the colony, Mrs. Howe introduced the word *mound*, one of five key vocabulary words related to the topic that were visually portrayed in the video. The students were shown the word *mound* written on a word card and asked to look for it in

the captions while they watched the video a second time. When they found the word, they raised their hands as a signal to pause the video so the word could be discussed. When the students described the word *mound*, it was in elaborate terms, noting its height, color, texture, and purpose. Mrs. Howe proceeded to introduce the individual words *build, chamber, colonies,* and *tunnels* in a similar fashion. The students enjoyed talking about the words while looking at their video images.

After the screen reading, the students focused on the key words in printed text. They were guided to find these key words in a typed handout that contained sentences from the captioned video. As a conclusion to the lesson, the students were encouraged to focus on the broader context from which the words originally came. They were asked what parts of the program they liked best and were given an opportunity to describe a favorite part. Mrs. Howe then previewed a few books from the library corner that contained information about termites and other insects that live in colonies.

Mrs. Howe and other teachers at the same school have capitalized on the power of video, using it as a way to get children excited about ideas in the world, particularly about science and social studies concepts. They have also used these videos as a "hook to books." The children who viewed the African termite video were eager to talk about what they had seen and to share their knowledge with others. The 2½ minute science video provided them with enough information so that when they explored texts on termites, ants, and bees, they found familiar words and concepts. Students were motivated to look at magazines and books about other insects and discovered, for example, that ant colonies also had an intricate system of "tunnels" and "chambers" with "workers," "soldiers," and a "queen."

The valuable activity of rereading material for different purposes is often a difficult task for below-average readers. Students who watched the termite video, however, were enthusiastic about rereading the captions as they rewatched the video. These students used the words from the captioned video in a variety of ways. Some students organized their information about termites on a semantic map, while others reviewed the video so they could be the announcers and read the captions aloud with the sound turned off. As students wrote news articles on termites, bees, and ants for the classroom newspaper, they rewatched the video and compared it to information they found in insect books.

In addition to reading the captions on the television screen, some students also had the opportunity to read captions on paper. Teachers have used caption scripts as regular texts to develop reading skills

and promote interest in independent reading. The technology for taking captions from television and printing them out on a personal computer has just recently become commercially available. In the near future, teachers will have easy access to printed reading material that comes directly from their students' favorite television programs.

There are a number of concerns related to the use of captioned video as a source of reading materials for below-average readers that need to be recognized. First, the match between what one hears (the audio) and the print one sees (captions) is not precise. While major concepts and ideas in the dialogue are presented in print, some words and phrases may be omitted due to the limited space available for displaying the text or to reduce the speed of captions. Second, the rate of the caption presentation is also a concern. The captions on many cartoons, situation comedies, and educational programs are presented at a rate of approximately 120 words per minute, a rapid rate for developing readers (Spache, 1981). A third concern is that captions are presented in all capital letters, rather than the traditional print convention of using upper case and lower case letters.

Despite these concerns, the results of recent research indicate that the use of captioned video enhances the reading performance of below-average readers when it is used as part of reading instruction (Koskinen, et al., 1987). Students have also learned words by simply viewing captioned video without the benefit of teacher-directed vocabulary instruction (Adler, 1985; Koskinen, et al., 1986; Neuman & Koskinen, 1992). These results have led educators to suggest that, in addition to using captioned video at school, having captions available at home for regular television viewing would provide opportunities for repeated exposure to print, thereby assisting vocabulary development. Even though there are substantial differences between reading printed text and reading screen text, below-average readers appear to benefit from the combination of sound, visual images, and printed words provided by captioned video.

Student enthusiasm about captioned video reading activities has led teachers to explore their use with a range of programming and for many educational purposes (Koskinen & Wilson, 1987; Koskinen, et al., 1991). Situation comedies and cartoons are particular favorites in which students look eagerly for interesting new words. The considerable dialogue in these programs offers many examples of figurative language which are easily understood when discussed with the video context. Teachers also use comedy and cartoon videos to encourage prediction skills. After playing a short segment, teachers may stop the tape to discuss events and then ask students to predict what will happen next. Viewing is then continued so students can verify their predictions. Discussion of these

programs often leads to the exploration of character motivation, plot episodes, and other story structure elements. These topics are naturally introduced by students and can be extended by the teacher. In addition, students frequently use newly acquired vocabulary in retellings of these stories and they are interested in writing alternative endings or continuing episodes of a favorite program. As teachers reflect on all the video/reading/writing interactions by below-average readers, they are excited by the instructional potential of captioned video. It appears that the confidence and interest that students bring to television viewing transfers to experiences with print on related topics.

SUGGESTIONS FOR GETTING STARTED

The following are a few suggestions that teachers have found helpful when using captioned video.

1. Get to know your equipment. It takes only limited practice (5-10 minutes) to calm any fears you may have about using a TV, TeleCaption decoder, and VCR during instruction. The decoder, which permits the captions to be seen, is easily attached to any television. If you have a television with a built-in decoder, all you need to do is push the button which accesses the captions.

2. Select a high-interest captioned video. There are many hours of captioned programming available each week, including situation comedies, news features, dramas, educational programs, etc. Closed captioned programs are identified in TV guides with the letters *CC*. Select material that will suit the educational needs and interests of your students. Teachers have found that the science and social studies content of programs such as *3-2-1 Contact* and *Reading Rainbow* focus on concepts and themes that are common to the elementary curriculum. The producers of these programs encourage their educational use, so they have imposed few educational viewing restrictions.

3. Preview the video. After selecting an appropriate video, preview it to locate the important concepts and vocabulary that are visually portrayed. This information will help you decide which segment(s) of the video you'll want to use. Try to keep the segment short (less than 5 minutes) so that viewing time will be only a small part of the normal instructional period. Record the VCR's counter numbers so the segment can be easily accessed.

4. Locate related texts. To provide opportunities to extend the vocabulary and concept knowledge presented in the video, locate books and magazines that focus on the same concepts. If possible, make copies of some of the video captions so that students can also use them as printed reading material after having viewed/read the program.

5. Introduce the video. As with any instructional material, activate prior knowledge before viewing and establish the purposes for viewing. Introduce the video

segment with the sound on so that students can use the visual and audio input. After students have become accustomed to screen reading, the audio can occasionally be turned off for a minute, and students can be challenged to see if they can read to determine what is happening (Goldman & Goldman, 1988). A major advantage of captioned television, however, is the multi-sensory stimulation, so most teachers generally leave the sound on.

6. Provide opportunities for rewatching the video and for reading related texts. To encourage vocabulary use, repeated exposures to print, and extension of knowledge, allow students to review the video and read related books and magazines. Teachers have found that students are eager to retell and write about viewing experiences. Other activities such as reading along with caption text have also been effective in enhancing word knowledge.

7. Create a video library. Since video activities are so effective and popular with students, you'll want to keep a record of your activities so you or other teachers can use them again. Some schools have begun collections of tapes and video lessons that are stored in the school's media center. These schools have developed their own indexes that identify tape segments by topic. They also provide folders that include video lesson suggestions, related books, and other supplemental material. Teachers use their colleagues' ideas and enthusiastically contribute their own successful activities to this communal resource.

Captioned movies and some educational programming (such as *Reading Rainbow* videos) can be purchased at commercial video stores and from educational publishers. There are, however, copyright laws which restrict the taping of television programs. The restrictions limit keeping recordings to no more than 45 days and they can be used by an individual teacher no more than two times. Further information can be obtained by checking the guidelines for recording related to the Copyright Act of 1976 as amended in 1981 (International Reading Association, 1982).

SUMMARY

The addition of captions to television is a technological breakthrough that can be used to enhance the vocabulary and comprehension skills of a range of below-average readers. Its motivational qualities make it appealing to students who have been difficult to reach with traditional methods and materials. Captioned television offers an option for starting students on the road to reading. Not only does it capture their attention, but its multi-sensory presentation of information decreases the difficulty of learning new words. Students feel confident processing information from television and attend to the semantically rich context. The combination of the video action with

spoken dialogue and printed words is a powerful tool in learning to read.

Information about TeleCaption decoders may be obtained from:

The National Captioning Institute
5203 Leesburg Pike
Falls Church, Virginia 22041
1-800-533-WORD

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NRRC National
Reading Research
Center

318 Aderhold, University of Georgia, Athens, Georgia 30602-7125
2102 J.M. Patterson Building, University of Maryland, College Park, Maryland 20742